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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ALUNKAL, THOMAS D				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/539,363

Applicant(s)

VAN DEN HOMBERG ET AL.

Examiner

THOMAS D. ALUNKAL

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokogawa (US 4,787,078) and in view of Minami et al. (hereafter Minami)(US 5,276,671).

Regarding claim 1, Yokogawa discloses an optical disc drive apparatus (see Title), comprising: a laser device for generating a light beam for optically reading data from a disc, said laser device being incorporated in an LC oscillator circuit (Figure 4, Elements 3 and 4 and Column 1, lines 13-34 which further describes the components of Figure 4). Yokogawa does not specifically disclose wherein a parasitic capacitance of said laser is resonated with an inductor to form a resonant LC circuit of said LC oscillator circuit. In the same field of endeavor (i.e., laser diode control), Minami discloses an LC oscillator circuit where a parasitic capacitance of a laser diode is resonated with an inductor to form a resonant LC circuit (Figure 9, Elements 52, C1, and 10 and Column 12, lines 17-26). Furthermore, Minami discloses energy regulation

means where the voltage supplied to the inductor is stored in the capacitor (C1) upon power-off and is then provided to the laser diode power-up (Column 12, lines 17-26).

Therefore, it would have obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the LC oscillator circuit configuration of Minami in place of the laser diode control circuit of Yokogawa, motivation being to provide reduce the amount of energy needed to power the laser diode upon power-up of the optical disc drive.

Regarding claim 2, Yokogawa discloses wherein said LC oscillator circuit comprises a current path in which said laser device and an inductance, preferably implemented as a coil, are coupled in a series management (Figure 4, Element L (coil inductor) and Element 4).

Regarding claim 3, Yokogawa discloses wherein said LC oscillator circuit comprises at least one capacitance coupled in series with said laser device and said inductance (Figure 4, Element C (capacitor)).

Regarding claim 4, Yokogawa discloses a laser driver circuit for driving a semiconductor laser (Figure 2 and Figure 4), having a first output terminal and a second output terminal for connection to the anode terminal and the cathode terminal, respectively, of a laser to be driven (anode and cathode terminals are inherently provided to the outputs of the APC); the laser driver circuit comprising an inductance having at least one terminal coupled to at least one of said output terminals (Figure 4, Element L). Yokogawa does not specifically disclose wherein a parasitic capacitance of said laser is resonated with an inductor to form a resonant LC circuit of said LC

oscillator circuit. In the same field of endeavor (i.e., laser diode control), Minami discloses and LC oscillator circuit where a parasitic capacitance of a laser diode is resonated with an inductor to form a resonant LC circuit (Figure 9, Elements 52, C1, and 10 and Column 12, lines 17-26). Furthermore, Minami discloses energy regulation means where the voltage supplied to the inductor is stored in the capacitor (C1) upon power-off and is then provided to the laser diode power-up.

Therefore, it would have obvious to one of ordinary skill in the art at the time of the applicant's invention to substitute the LC oscillator circuit configuration of Minami in place of the LC oscillator circuit of Yokogawa, motivation being to provide reduce the amount of energy needed to power the laser diode upon power-up of the optical disc drive.

Regarding claim 7, Yokogawa discloses a one-way conductor coupled between one of said output terminals and a voltage reference, said one-way conductor preferably comprising a diode (Figure 4, Element 4 (laser diode)).

Regarding claim 8, Yokogawa discloses wherein said one-way conductor comprises a controllable switch controlled by a signal derived from a voltage occurring at a location in a current path defined by said inductance and said output terminals, said location preferably corresponding to one terminal or tap of said inductance (Figure 4, Element 4. More specifically, diode, 4, acts as a switch depending on the voltage being applied).

Regarding claim 10, Yokogawa discloses an output stage implemented as an oscillator, for instance a Pierce oscillator, a Colpitts oscillator, a Hartley oscillator, coupled to at least one of said output terminals (Figure 4, Element 1 (oscillator)).

Regarding claim 11, Yokogawa discloses a semiconductor laser driven by a laser driver circuit according to claim 4 (Column 2, lines 27-31 (semiconductor laser)).

Regarding claim 12, Yokogawa discloses a laser driver circuit according to claim 4 (Figure 2).

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokogawa and Minami.

Regarding claim 5, Yokogawa discloses at least one capacitance (Figure 4, Element C). Yokogawa does not disclose where the capacitance is located between an inductance and first or second output terminal.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the capacitance located between an inductance and first or second output terminal, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Regarding claim 5, Yokogawa discloses wherein said inductance has one terminal coupled to a first output terminal (Figure 4, Element L). Yokogawa does not disclose where the inductance has its second terminal coupled to a second output terminal.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the inductance between first and second output terminals, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokogawa and Minami, as applied to claims 1-8 and 10-12 above, and in view of Bockle et al. (hereafter Bockle)(US PgPub 2003/0043611).

Regarding claim 9, Yokogawa does not disclose an inverter coupled in parallel to said inductance. In the same field of endeavor, Bockle discloses an inverter in parallel with an inductance (Paragraph 0010 and Figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the inverter of Bockle to the laser driver circuit of Yokogawa, motivation being to reduce the amount of energy loss in the laser driver circuit (Paragraph 0013 of Bockle).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sanford et al. (US 6,175,579) disclose an apparatus and method for laser frequency control. Gaddis (US 5,748,657) discloses a high efficiency constant current laser drive. Takahara (US 6,011,769) discloses an optical recording/reproducing apparatus. Fujikawa et al. (US 5,495,464) disclose an optical data recording/reproducing apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS D. ALUNKAL whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas D Alunkal/
Examiner, Art Unit 2627

/Wayne R. Young/
Supervisory Patent Examiner, Art Unit 2627